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Part V

Department of Transportation

Research and Special Programs
Administration

49 CFR Parts 171, 172, 173, and 178
Intermediate Bulk Containers for
Hazardous Materials; Final Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs
Administration

49 CFR Parts 171, 172, 173 and 178

[Docket No. HM-181E; Amdt. Nos. 171-134,
172-142, 173-243, 178-108]

RIN 2137-AC23

Intermediate Bulk Containers for
Hazardous MaterialsAGENCY: Research and Special Programs
Administration (RSPA), DOT.ACTION: Final rule; revisions and
response to petitions for
reconsideration.

SUMMARY: This amendment makes revisions to a final rule published in the **Federal Register** under Docket HM-181E (59 FR 38040, July 26, 1994) in response to a number of petitions for reconsideration. This document also clarifies and makes corrections to the final rule. That final rule established requirements for the construction, maintenance and use of intermediate bulk containers (IBCs) for the transportation of hazardous materials. These changes respond to petitions for reconsideration regarding IBC authorizations, design, construction and use, and align requirements for IBCs with revisions in the 8th edition of the U.N. Recommendations on the Transport of Dangerous Goods and the 27th revision of the International Maritime Organization's International Maritime Dangerous Goods (IMDG) Code.

DATES: This amendment is effective on October 1, 1995. However, immediate compliance with the regulations as amended herein is authorized.

Incorporation by reference: The incorporation by reference listed in this final rule is approved by the Director of the Office of the Federal Register as of October 1, 1995.

FOR FURTHER INFORMATION CONTACT: John Potter, Office of Hazardous Materials Standards, (202) 366-8553 or William Gramer, Office of Hazardous Materials Technology, (202) 366-4545, RSPA, U.S. Department of Transportation, 400 Seventh Street SW., Washington DC 20590-0001.

SUPPLEMENTARY INFORMATION: On July 26, 1994, the Research and Special Programs Administration published a final rule under Docket HM-181E (59 FR 38040) that revised the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) by incorporating requirements for the construction, maintenance and use of IBCs for the

transportation of hazardous materials. In response to 29 petitions for reconsideration, this document revises, clarifies and makes corrections to the final rule. Petitioners recommended revisions to: (1) The policy stated in the preamble at 59 FR 38040 addressing exemption packagings affected by this final rule; (2) the special provisions for IBCs contained in § 172.102; (3) the provision for the manufacture and use of DOT specification 56 and 57 portable tanks provided in § 173.32(d); (4) operational requirements for reuse of IBCs in § 173.35(b); (5) generic authorizations for use of IBCs in §§ 173.240, 173.241, 173.242, and 173.243; (6) standards for rigid plastic and composite IBCs in §§ 178.706 and 178.707; (7) responsibility for the performance of UN-certified IBCs in § 178.801(b); (8) testing and certification of IBCs in § 178.803; and (9) application of the IBC vibration test in § 178.819.

Several petitions relating to IBC commodity authorizations, such as hydrogen peroxide aqueous solutions, were addressed in a final rule published under Docket HM-215A (59 FR 67390-67522, December 29, 1994).

Petitions Granted

In response to petitions, authorizations for use of IBCs for a number of materials are added to the § 172.101 Hazardous Materials Table. Some of these changes are consistent with many of the latest revised IBC authorizations in the International Maritime Organization's International Maritime Dangerous Goods (IMDG) Code. Others reflect prior safe hazardous materials shipping experience in DOT exemption bulk packagings. For example, IBC authorizations are revised for a number of Division 4.3 DANGEROUS WHEN WET materials in Packing Groups II and III, which were previously forbidden for transportation in IBCs. Many of these materials now are permitted in all sift-proof and water-resistant IBCs. In addition, certain Division 4.3 Packing Group I solid materials are authorized for transportation in IBCs, consistent with the IMDG Code. Prohibitions against use of IBCs are removed from "Cyclohexylamine" and "Hafnium powder, dry." A wider range of IBCs is permitted for "Toxic, liquids, organic, n.o.s.," and "Toxic liquid, inorganic, n.o.s.," Packing Group II.

One petitioner asked RSPA to add filling limit provisions to the IBC operational requirements in § 173.35 similar to those provided in § 173.24a(b) for non-bulk packagings. For example, the gross mass (or net mass in the case of flexible IBCs) marked on the IBC can

be exceeded when the IBC is tested and certified for a Packing Group II liquid and filled with a Packing Group III solid; or an IBC is tested and certified for a Packing Group I solid and filled with a Packing Group II or Packing Group III solid. RSPA concurs and, accordingly, is adding a paragraph (l) to provide for this flexibility in IBC use. RSPA notes that the amount by which the gross mass of IBCs can be exceeded in these cases is based on the ratios between drop heights specified for Packing Groups I and III (2.25) and Packing Groups I and II, and II and III (1.5). IBCs certified for liquids may also be used for solids.

In response to a petition, a maximum net mass capacity standard of not less than 400 kilograms (882 pounds) is added in § 178.700(c)(1) for consistency with similar standards for non-bulk packagings in subpart L. To reduce the need for IBC retesting, RSPA grants a petition from the Rigid Intermediate Bulk Container Association by adding Note 6 to the table of IBC tests in § 178.803 to permit any desired sequencing of the vibration test for dual-marked, exemption IBCs and non-DOT specification portable tanks intended for export that were tested before October 1, 1994.

Several petitioners requested removal of the word "rotate" from the vibration test method prescribed for IBCs in § 178.819(b)(2). They contend that allowing an IBC to rotate would involve a "major redesign of all known testing platforms and restraining members." Section 178.608(b)(2) requires that non-bulk packagings be left free to rotate, a standard that may be inappropriate for IBCs which are unlikely to experience the same vibration stresses in transportation. RSPA further acknowledges that the vibration test requirement for DOT 56 and 57 portable tanks in §§ 178.252-3 and 178.253-5 allows only vertical motion. Therefore, the word "rotate" is removed from the test method stated in § 178.819(b)(2). However, RSPA will not restrict rotation if it is included in an established vibration test protocol.

One petitioner stated that general requirements in § 178.801(b) for assuring that each IBC is capable of meeting Part 178 performance standards are inconsistent with other provisions in the HMR. As written, the petitioner said, paragraph (b) makes the shipper "responsible for every aspect of [IBC] fabrication and testing, including those aspects that were not performed by the shipper." The petitioner suggested that paragraph (b) conform with final rules published under HM-215A clarifying §§ 173.22, 178.2 and 178.601(b)

requiring shippers to be responsible for only the manufacturing functions they perform. RSPA concurs and paragraph (b) is revised accordingly.

Petitions Denied

A petitioner claimed that RSPA's exemption policy for IBCs established in the final rule (59 FR 38040) is unworkable for every exemption IBC considered to be "equivalent" to IBCs already meeting UN standards. The petitioner said no exemption IBC could meet terms in option 2 permitting exemption IBCs to be certified as UN standard packagings if they already conform with subpart N and O requirements. The petitioner said, "A builder of existing exemption tanks would have had to predict the tests and their order in testing that DOT prescribes." The petitioner observed that the proposed testing differed from tests prescribed in the final rule. The petitioner asked RSPA to add a note to the table of IBC tests in § 178.803 allowing exemption IBCs to be marked to indicate compliance with subparts N and O but that they need not "be tested as prescribed in this section." However, the petitioner said such IBCs "must be capable of passing all the applicable tests."

This request is denied. Exemption IBCs that meet new construction and performance testing standards in subparts N and O, under option 2, "may be remarked and certified as UN standard packagings." Under option 3, existing exemption IBCs developed under standards different from those adopted under subparts N and O "may be approved as a UN standard packaging" under the approval process provided in § 178.801(i) if they are shown to be equally effective and testing methods used are equivalent to UN standards. With respect to the petitioner's request, under option 3, manufacturers or users of IBCs differing from subpart O requirements in the way they were tested, including test sequences differing from the order of tests established in § 178.803, may demonstrate that IBCs developed under exemption are equally effective, including test methods.

Several petitioners requested indefinite use of exemption IBCs as long as they meet applicable periodic retest requirements. These requests are denied. Under the exemption policy stated at 59 FR 38040, an equivalent packaging may be approved by RSPA as a UN standard packaging under the provision in § 178.801(i).

A petitioner's request to revise § 173.35(b) to permit reuse of flexible IBCs is denied. As RSPA pointed out in

the preamble to the final rule in HM-181E (59 FR 38042), there is a lack of sufficient evidence "that fiberboard, wooden or flexible IBCs are designed to be, or are suitable for, reuse in hazardous materials service."

Two petitioners asked RSPA to amend paragraph (c) of §§ 173.240 and 173.241 by adding the phrase "rigid intermediate bulk containers" to the titles of these paragraphs. They requested revisions to § 173.240(c) to authorize "sift-proof non-DOT specification portable tanks, closed bulk bins and rigid intermediate bulk containers suitable for transport of liquids," and to § 173.241(c) to authorize "non-DOT specification portable tanks and intermediate bulk containers suitable for transport of liquids." The petitions are denied since a non-specification bulk packaging fitting this description currently is permitted by paragraph (c) of these sections. In effect, any rigid enclosed packaging that is strong and tight (but not a flexible IBC), and constructed so that its contents will not leak under conditions normally incident to transportation meets requirements for a "closed bulk bin" in § 173.240(c), a "sift-proof non-DOT specification portable tank" in § 173.240(c), or a "non-DOT specification portable tank suitable for transport of liquids" in § 173.241(c).

Petitioners asked RSPA to authorize, under § 173.242, rigid plastic and composite IBCs for "Oxidizing substances, liquid, corrosive, n.o.s.," Packing Group II, and "Corrosive liquids, oxidizing, n.o.s.," Packing Group II. In the final rule, these materials are authorized in metal-only IBCs under § 173.243. The petitions are denied. RSPA believes there is an insufficient shipment history of these materials in a wide range of IBC design types to warrant broader IBC authorization.

RSPA is denying a petition to restore DOT 56 and 57 portable tank design and construction requirements in §§ 178.251 through 178.251-7, 178.252 and 178.253. The petitioner claimed that removal of these sections would lead to "unnecessary confusion and uncertainty" since new construction of these tanks is authorized through September 30, 1996. Removal of construction requirements for DOT Specification 56 and 57 portable tanks is consistent with removal of pre-HM-181 non-bulk packaging specifications four years prior to the date on which they were no longer permitted to be manufactured. For reference to DOT 56 and 57 specifications, manufacturers and users can retain the 1993 edition of

49 CFR Parts 100-199, as amended. However, RSPA encourages them to convert to the new standards as soon as practicable. A petitioner asked RSPA to add a "fusible" device to the pressure relief devices specified for metal, rigid plastic and composite IBCs in §§ 178.705(c)(2)(i), 178.706(c)(4) and 178.707(c)(3)(iv). This petition is denied as unnecessary. Fusible devices are currently permitted by the provision in each section that states pressure relief may be achieved by "other means of construction."

Petitions requesting revisions to §§ 178.706(c)(3) and 178.707(c)(3)(iii) to permit use of recycled materials for the construction of plastic and composite IBCs are denied. Although RSPA recognizes the benefits of recycling plastic waste, RSPA has not been provided with sufficient information to justify use of recycled plastic materials in the construction of IBCs.

Petitions to allow use of the "USA" mark on IBCs manufactured in other countries and intended for sale and use in the U.S. are denied. As clarified in § 178.3(b)(3) under Docket HM-215A (59 FR 67519, December 29, 1994), "the letters 'USA' may only be used to indicate that the IBC was manufactured in the United States." IBCs manufactured in a foreign country should conform to requirements of the competent authority of that country.

Clarifications and Corrections

In other revisions to this final rule, RSPA corrects U.S. standard conversions relating to the upper capacity for IBCs authorized for Packing Group I solids in § 173.242(d)(2)(i) to read "53 cubic feet" and "106 cubic feet," respectively. Also in § 173.242(d)(2), "flexible" and "fiberboard" IBCs (inadvertently omitted in the final rule) are authorized. In § 173.243(d)(2)(i), Packing Group I solids are authorized for transportation in metal IBCs with capacities up to three cubic meters (106 cubic feet). In § 178.700(c)(1)(i), the volumetric capacity for the body of a receptacle is specified as not more than three cubic meters (3,000 liters, 793 gallons, or 106 cubic feet) and not less than 0.45 meters (450 liters, 119 gallons, or 15.9 cubic feet).

RSPA is correcting § 173.243(d)(2) by removing references to IBCs other than metal. Section 178.705(c)(2)(ii) is clarified to show that the pressure relief requirement for metal IBCs is measured in gauge pressure and not absolute pressure. Thus, reference to the subtraction of atmospheric pressure is removed and reference to measurement of gauge pressure of the hazardous

material measured in the IBC is added in its place.

RSPA is aligning the table of IBC tests in § 178.803 with new provisions in the 8th revision of the UN Recommendations on the Transport of Dangerous Goods for the bottom lift and stacking tests. Therefore, in this final rule, rigid plastic and composite IBCs are required to be bottom lift-tested without qualification. References to Note 2 in the table specifying that test only if IBCs are "designed to be handled" this way are removed from rigid plastic and composite IBC design types. RSPA also is changing Note 2 to require metal IBCs to withstand either the top lift test or the bottom lift test. Note 7 is added to except metal, rigid plastic, composite, fiberboard and wooden IBCs from the stacking test if the IBC is not designed to be stacked.

In this final rule, RSPA also is making an editorial correction to § 173.306(e) by updating a reference to a national consensus standard for refrigerating machines. Section 173.306(e) is amended to replace the reference to ANSI B9.1 with a reference to ANSI/ASHRAE 15-1994, which has superseded ANSI B9.1.

Regulatory Analyses and Notices

Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and was not reviewed by the Office of Management and Budget. The rule is not considered significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034).

Executive Order 12612

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612 ("Federalism"). Federal law expressly preempts State, local, and Indian tribe requirements applicable to the transportation of hazardous materials that cover certain subjects and are not substantively the same as Federal requirements. 49 U.S.C. 5125(b)(1). Covered subjects are:

- (i) The designation, description, and classification of hazardous materials;
- (ii) The packing, repacking, handling, labeling, marking, and placarding of hazardous materials;
- (iii) The preparation, execution, and use of shipping documents pertaining to hazardous materials and requirements respecting the number, content, and placement of such documents;

(iv) The written notification, recording, and reporting of the unintentional release in transportation of hazardous materials; or

(v) The design, manufacturing, fabrication, marking, maintenance, reconditioning, repairing, or testing of a package or container which is represented, marked, certified, or sold as qualified for use in the transportation of hazardous materials.

This final rule addresses covered subjects, under items (ii) and (v) above and, therefore, preempts State, local, or Indian tribe requirements not meeting the "substantively the same" standard. The Federal hazardous materials transportation law (49 U.S.C. 5125(b)(2)) provides that if DOT issues a regulation concerning any of the covered subjects after November 16, 1990, DOT must determine and publish in the **Federal Register** the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and no later than two years after the date of issuance. RSPA has determined that the effective date of Federal preemption of the July 26, 1994 final rule was January 13, 1995. RSPA has determined that the effective date of Federal preemption for this final rule will be November 1, 1995. Because RSPA lacks discretion in this area, preparation of a federalism assessment is not warranted.

Regulatory Flexibility Act

I certify that this final rule will not have a significant economic impact on a substantial number of small entities. Although this rule applies to certain shippers and carriers of hazardous materials in intermediate bulk containers, some of whom may be small entities, its economic impacts are minimal.

Paperwork Reduction Act

The information collection requirements contained in this rule have been approved by the Office of Management and Budget under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3504(h)) and assigned control number 2137-0510.

Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labels, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Incorporation by reference, Packagings and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 178

Hazardous materials transportation, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

In consideration of the foregoing, 49 CFR Parts 171, 172, 173 and 178 are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

§ 171.7 [Amended]

1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101-5127; 49 CFR 1.53.

2. In § 171.7, in the table in paragraph (a)(3), under "American National Standards Institute, Inc.", in column 1, the entry "ANSI B9.1-89, Safety Code for Mechanical Refrigeration" is revised to read "ANSI/ASHRAE 15-94, Safety Code for Mechanical Refrigeration".

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

3. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. 5101-5127; 49 CFR 1.53.

4. In § 172.101, the following entries in the Hazardous Materials Table are revised to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification numbers	Packing group	Label(s) required (if not excepted)	Special provisions	Packaging authorizations (§ 173.***)			Quantity limitations		Vessel stowage requirements	
							Excep-tions	Nonbulk packag-ing	Bulk packag-ing	Pas-senger aircraft or rail-car	Cargo aircraft only	Vessel stowage	Other provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	* Alkali metal amides	4.3	UN1390	II	* Dangerous when wet	* A6, A7, A8, A19, A20, B106.	None ..	212	241	* 15 kg ...	50 kg ...	E	40
	Alkaline earth metal alloys, n.o.s.	4.3	UN1393	II	Dangerous when wet	A19, B101, B106.	None ..	212	241	15 kg ...	50 kg ...	E	
	Alkaline earth metal amalgams.	4.3	UN1392	I	Dangerous when wet	A19, B101, B106, N34, N40.	None ..	211	242	Forbidden.	15 kg ...	D	
	Aluminum ferrosilicon powder.	4.3	UN1395	II	Dangerous when wet, poison.	A19, B106, B108.	None ..	212	242	15 kg ...	50 kg ...	A	40, 85, 103
	Aluminum powder, uncoated.	4.3	UN1396	III	Dangerous when wet, keep away from food.	A19, B106, B108.	None ..	213	241	25 kg ...	100kg ..	A	40, 85, 103
					Dangerous when wet	A19, B106, B108.	None ..	212	242	15 kg ...	50 kg ...	A	39
					Dangerous when wet	A19, B106, B108.	None ..	213	241	25 kg ...	100 kg .	A	39
	Aluminum processing by-products.	4.3	UN3170	II	Dangerous when wet	B106 ...	None ..	212	242	15 kg ...	50 kg ...	B	85, 103
	Aluminum silicon powder, uncoated.	4.3	UN1398	III	Dangerous when wet	B106 ...	None ..	213	241	25 kg ...	100 kg .	B	85, 103
					Dangerous when wet	A1, A19, B108.	None ..	213	241	25 kg ...	100 kg .	A	40, 85, 103
	Barium	4.3	UN1400	II	Dangerous when wet	A19, B101, B106.	None ..	212	241	15 kg ...	50 kg ...	E	
	Calcium	4.3	UN1401	II	Dangerous when wet	B101, B106.	None ..	212	241	15 kg ...	50 kg ...	E	
	Calcium carbide	4.3	UN1402	I	Dangerous when wet	A1, A8, B55, B101, B106, N34.	None ..	211	242	Forbidden.	15 kg ...	B	

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification numbers	Packing group	Label(s) required (if not excepted)	Special provisions	Packaging authorizations (§ 173.***)			Quantity limitations		Vessel stowage requirements	
							Excep-tions	Nonbulk packag-ing	Bulk packag-ing	Pas-senger aircraft or rail-car	Cargo aircraft only	Vessel stowage	Other provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
				II	Dangerous when wet	A1, A8, B55, B101, B106, N34.	None	212	241	15 kg	50 kg	B	
	Calcium silicide	4.3	UN1405	II	Dangerous when wet	A19, B105, B106.	None	212	241	15 kg	50 kg	B	85, 103
				III	Dangerous when wet	A1, A19, B106, B108.	None	213	241	25 kg	100 kg	B	85, 103
	Cerium, turnings or gritty power.	4.3	UN3078	II	Dangerous when wet	A1, B106, B109.	None	212	242	15 kg	50 kg	E	
	Cresylic acid	6.1	UN2022	II	Poison, corrosive	B110, T8.	None	202	243	1 L	30 L	B	
	Cyclohexylamine	8	UN2357	II	Corrosive, flammable liquid	B101, T8.	None	202	243	1 L	30 L	A	40
	Hafnium powder, dry	4.2	UN2545	I	Spontaneously combustible	B100	None	211	242	Forbidden.	Forbidden.	D	
				II	Spontaneously combustible	A19, A20, B101, B106, N34.	None	212	241	15 kg	50 kg	D	
				III	Spontaneously combustible	B105, B106.	None	213	241	25 kg	100 kg	D	
	Lithium borohydride	4.3	UN1413	I	Dangerous when wet	A19, B100, N40.	None	211	242	Forbidden.	15 kg	E	
	Lithium nitride	4.3	UN2806	I	Dangerous when wet	A19, B101, B106, N40.	None	211	242	Forbidden.	15 kg	E	
	Lithium silicon	4.3	UN1417	II	Dangerous when wet	A19, A20, B105, B106.	None	212	241	15 kg	50 kg	A	85, 103
	Magnesium, powder or Magnesium alloys, powder.	4.3	UN1418	I	Dangerous when wet, spontaneously combustible.	A19, B56.	None	211	244	Forbidden.	15 kg	A	39
				II	Dangerous when wet, spontaneously combustible.	A19, B56, B101, B106.	None	212	241	15 kg	50 kg	A	39

	III		Dangerous when wet, spontaneously combustible.	A19, B56, B106, B108.	None ..	213	241	25 kg ...	100 kg .	A	39
Maneb stabilized or Maneb preparations, stabilized against self-heating.	4.3 UN2968	III	Dangerous when wet	54, A1, A19, B108.	None ..	213	242	25 kg ...	100 kg .	B	34
Metal hydrides, water reactive, n.o.s.	4.3 UN1409	I	Dangerous when wet	A19, B100, N34, N40.	None ..	211	242	Forbid-den.	15 kg ...	D	
		II	Dangerous when wet	A19, B101, B106, N34, N40.	None ..	212	242	15 kg ...	50 kg ...	D	
Metallic substance, water reactive, n.o.s.	4.3 UN3208	I	Dangerous when wet	B101, B106.	None ..	211	242	Forbid-den.	15 kg ...	E	40
		II	Dangerous when wet	B101.	None ..	212	242	15 kg ...	50 kg ...	E	40
		III	Dangerous when wet	B106.	None ..	213	241	25 kg ...	100 kg .	E	40
Metallic substance, water reactive, self-heating, n.o.s.	4.3 UN3209	I	Dangerous when wet, spontaneously combustible.	B100 ...	None ..	211	242	Forbid-den.	15 kg ...	E	40
		II	Dangerous when wet, spontaneously combustible.	B101, B106.	None ..	212	242	15 kg ...	50 kg ...	E	40
		III	Dangerous when wet, spontaneously combustible.	B101, B106.	None ..	213	242	25 kg ...	100 kg .	E	40
Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.	4.3 UN3207	I	Dangerous when wet, flammable liquid.	None ..	201	244	Forbid-den.	1 L	E	40
		II	Dangerous when wet, flammable liquid.	B101, B106.	None ..	202	243	1 L	5 L	E	40
		III	Dangerous when wet, flammable liquid.	B106 ...	None ..	203	242	5L	60 L	E	40
Phosphorus pentasulfide, free from yellow or white phosphorus.	4.3 UN1340	II	Dangerous when wet, flammable solid.	A20, B59, B101, B106.	None ..	212	242	15 kg ...	50 kg ...	B	74
Potassium borohydride	4.3 UN1870	I	Dangerous when wet	A19, B100, N40.	None ..	211	242	Forbid-den.	15k	E	
Sodium borohydride	4.3 UN1426	I	Dangerous when wet	B100, N40.	None ..	211	242	Forbid-den.	15 kg ...	E	
Toxic liquid, inorganic, n.o.s.	6.1 UN3287	I	Poison	T42	None ..	201	243	1 L	30L	A	
		II	Poison	T14, B110.	None ..	202	243	5 L	60L	A	
Toxic, liquids, organic, n.o.s.	6.1 UN2810	I	Keep away from food	T7	153	203	241	60 L	220 L ...	A	
		II	Poison	T42	None ..	201	243	1L	30L	B	40
		II	Poison	B110, T14.	None ..	202	243	5 L	60L	B	40

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	Packing group	Label(s) required (if not excepted)	Special provisions	Packaging authorizations (§ 173.***)			Quantity limitations (9)		Vessel stowage requirements (10)	
							Excep-tions	Nonbulk packag-ing	Bulk packag-ing	Pas-senger aircraft or rail-car	Cargo aircraft only	Vessel stowage	Other provi-sions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Water-reactive liquid, corrosive, n.o.s.	4.3	UN3129	I	Keep away from food Dangerous when wet, corrosive.	T7	153	203	241	60 L Forbid-den.	220 L ... 1 L	A	40
				II	Dangerous when wet, corrosive.	B106 ...	None ..	202	243	1 L	5 L	E	85
				III	Dangerous when wet, corrosive.	B106 ...	None ..	203	242	5 L	60 L	E	
	Water-reactive liquid, n.o.s.	4.3	UN3148	I	Dangerous when wet	None ..	201	244	Forbid-den.	1 L	E	40
				II	Dangerous when wet	B106 ...	None ..	202	243	1 L	5 L	E	40
				III	Dangerous when wet	B106 ...	None ..	203	242	5 L	60 L	E	40
	Water-reactive liquid, toxic, n.o.s.	4.3	UN3130	I	Dangerous when wet, poisonous.	A4	None ..	201	243	Forbid-den.	1 L	D	
				II	Dangerous when wet, poisonous.	B106 ...	None ..	202	243	1 L	5 L	E	85
				III	Dangerous when wet, keep away from food.	B106 ...	None ..	203	242	5 L	60 L	E	85
	Water-reactive solid, corrosive, n.o.s.	4.3	UN3131	I	Dangerous when wet, corrosive.	B101, B106, N40.	None ..	211	242	Forbid-den.	15 kg ...	D	
				II	Dangerous when wet, corrosive.	B101, B106.	None ..	212	242	15 kg ...	50 kg ...	E	85
				III	Dangerous when wet, corrosive.	B105, B106.	None ..	213	241	25 kg ...	100 kg .	E	85
	Water-reactive solid, flammable, n.o.s.	4.3	UN3132	I	Dangerous when wet, flammable solid.	B101, B106, N40.	None ..	211	242	Forbid-den.	15 kg ...	E	
				II	Dangerous when wet, flammable solid.	B101, B106.	None ..	212	242	15 kg ...	50 kg ...	E	
				III	Dangerous when wet, flammable solid.	B105, B106.	None ..	213	241	25 kg ...	100 kg .	E	
	Water-reactive solid, n.o.s.	4.3	UN2813	I	Dangerous when wet	B101, B106, N40.	None ..	211	242	Forbid-den.	15 kg ...	E	40
				II	Dangerous when wet	B101, B106.	None ..	212	242	15 kg ...	50 kg ...	E	40
				III	Dangerous when wet	B105, B106.	None ..	213	241	25 kg ...	100 kg .	E	40
	Water-reactive solid, self-heating, n.o.s.	4.3	UN3135	I	Dangerous when wet, spontaneously combustible.	B100, N40.	None ..	211	242	Forbid-den.	15 kg ...	E	
				II	Dangerous when wet, spontaneously combustible.	B101, B106.	None ..	212	242	15 kg ...	50 kg ...	E	
				III	Dangerous when wet, spontaneously combustible.	B101, B106.	None ..	213	241	25 kg ...	100 kg .	E	

Water-reactive solid, toxic, n.o.s.	4.3 UN3134	I	Dangerous when wet, poi- son.	A8, B101, B106, N40.	None ...	211	242	Forbid- den.	15 kg ...	D
Zinc powder or Zinc dust ...	4.3 UN1436	II	Dangerous when wet, poi- son.	B105.	None ...	212	242	15 kg ...	50 kg ...	E
		III	Dangerous when wet, keep away from food.	B106.	None ...	213	241	25 kg ...	100 kg .	E
		I	Dangerous when wet, spontaneously combus- tible.	A19, B109, N40.	None ...	211	242	Forbid- den.	15 kg ...	A
		II	Dangerous when wet, spontaneously combus- tible.	A19, B109.	None ...	212	242	15 kg ...	50 kg ...	A
		III	Dangerous when wet, spontaneously combus- tible.	B108 ...	None ...	213	242	25 kg ...	100 kg .	A

* * * * *

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

5. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

6. In § 173.24b, paragraph (d)(2) is revised to read as follows:

§ 173.24b Additional general requirements for bulk packagings.

* * * * *

- (d) * * *
(1) * * *

(2) Except as otherwise provided in this subchapter, exceeds the maximum weight of lading marked on the specification plate.

7. In § 173.35, paragraph l is added to read as follows:

§ 173.35 Hazardous materials in intermediate bulk containers

* * * * *

(l) *Intermediate bulk container filling limits.*

(1) Except as provided in this section, an intermediate bulk container may not be filled with a hazardous material in excess of the maximum gross mass marked on that container.

(2) An intermediate bulk container which is tested and marked for Packing Group II liquid materials may be filled with a Packing Group III liquid material to a gross mass not exceeding 1.5 times the maximum gross mass marked on that container, if all the performance criteria can still be met at the higher gross mass.

(3) An intermediate bulk container which is tested and marked for liquid hazardous materials may be filled with a solid hazardous material to a gross mass not exceeding the maximum gross mass marked on that container. In addition, an intermediate bulk container intended for the transport of liquids which is tested and marked for Packing Group II liquid materials may be filled with a Packing Group III solid hazardous material to a gross mass not exceeding the marked maximum gross mass multiplied by 1.5 if all the performance criteria can still be met at the higher gross mass.

(4) An intermediate bulk container which is tested and marked for Packing Group I solid materials may be filled with a Packing Group II solid material to a gross mass not exceeding the maximum gross mass marked on that container, multiplied by 1.5, if all the performance criteria can be met at the higher gross mass; or a Packing Group

III solid material to a gross mass not exceeding the maximum gross mass marked on the intermediate bulk container, multiplied by 2.25, if all the performance criteria can be met at the higher gross mass. An intermediate bulk container which is tested and marked for Packing Group II solid materials may be filled with a Packing Group III solid material to a gross mass not exceeding the maximum gross mass marked on the intermediate bulk container, multiplied by 1.5.

§ 173.35 [Amended]

8. In addition, in § 173.35, in paragraph (j), the references to “35.3 cubic feet” and “17.7 cubic feet” are amended to read “106 cubic feet” and “53 cubic feet” respectively.

§ 173.242 [Amended]

9. In paragraph (d)(2)(i) of § 173.242, the following changes are made:

a. The references to “35.4 cubic feet” and “17.7 cubic feet” are amended to read “106 cubic feet” and “53 cubic feet” respectively.

b. After the word “composite”, the words “flexible, fiberboard” are added.

10. In § 173.243, paragraph (d)(2) is revised as follows:

§ 173.243 Bulk packaging for certain high hazard liquids and dual hazard materials which pose a moderate hazard.

* * * * *

- (d) * * *

(2) Intermediate bulk containers are authorized subject to the following conditions and limitations:

(i) No Packing Group I liquids or materials classified as Division 4.2 Packing Group I are authorized in intermediate bulk containers.

(ii) Packing Group I solids are authorized only in metal intermediate bulk containers with capacities up to three cubic meters (106 cubic feet); and

(iii) Liquids with a vapor pressure greater than 110 kPa (16 psig) at 50 °C (122 °F), or 130 kPa (18.9 psig) at 55 °C (131 °F), are not authorized in metal intermediate bulk containers.

* * * * *

11. In § 173.306, paragraph (e)(1)(i) is revised to read as follows:

§ 173.306 Limited quantities of compressed gases.

* * * * *

- (e) * * *
(1) * * *

(i) Each pressure vessel may not contain more than 5,000 pounds of Group A1 refrigerant as classified in ANSI/ASHRAE Standard 15 or not more than 50 pounds of refrigerant other than Group A1.

* * * * *

§ 173.306 [Amended]

12. In addition, in § 173.306, paragraphs (e)(1)(iii), (e)(1)(v) and (e)(1)(vi) are amended by removing the phrase “American National Standard B9.1.” and replacing it with the phrase “ANSI/ASHRAE 15”.

PART 178—SPECIFICATIONS FOR PACKAGINGS

13. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

13. In § 178.700, paragraph (c)(1) is revised to read as follows:

§ 178.700 Purpose, scope and definitions

* * * * *

- (c) * * *

(1) *Body* means the receptacle proper (including openings and their closures, but not including service equipment), that has a volumetric capacity of not more than three cubic meters (3,000 liters, 793 gallons, or 106 cubic feet) and not less than 0.45 cubic meters (450 liters, 119 gallons, or 15.9 cubic feet) or a maximum net mass of not less than 400 kilograms (882) pounds.

* * * * *

§ 178.705 [Amended]

15. In § 178.705, in paragraph (c)(2)(ii), the words “minus 100 kPa (14.5 psig)” are removed and the words “measured in the intermediate bulk container” are added in their place.

§ 178.710 [Amended]

16. In § 178.710, in paragraph (c)(5), the words “throughout the life of the inner receptacle” are removed and the words “throughout the life of the container” are added in their place.

17. In § 178.801, paragraph (b) is revised to read as follows:

§ 178.801 General requirements

* * * * *

- (a) * * *

(b) *Responsibility.* It is the responsibility of the intermediate bulk container manufacturer to assure that each intermediate bulk container is capable of passing the prescribed tests. To the extent that an intermediate bulk container assembly function, including final closure, is performed by the person who offers a hazardous material for transportation, that person is responsible for performing the function in accordance with §§ 173.22 and 178.2 of this subchapter.

* * * * *

18. Section 178.803 is revised to read as follows:

§ 178.803 Testing and certification of intermediate bulk containers.

Tests required for the certification of each intermediate bulk container design

type are specified in the following table. The letter X indicates that one intermediate bulk container (except where noted) of each design type must

be subjected to the tests in the order presented:

Performance test	Intermediate Bulk Container (IBC) type					
	Metal IBCs	Rigid plastic IBCs	Composite IBCs	Fiber-board IBCs	Wooden IBCs	Flexible IBCs
Vibration	6X	6X	6X	6X	6X	1.5↓
Bottom lift	2X	X	X	X	X	
Top lift	2X	2X	2X			2.5X
Stacking	7X	7X	7X	7X	7X	5X
Leakproofness	3X	3X	3X			
Hydrostatic	4X	3X	3X			
Drop	4X	4X	4X	4X	4X	5X
Topple						5X
Righting						2.5X
Tear						5X

¹ Flexible intermediate bulk containers must be capable of withstanding the vibration test.

² This test must be performed only if intermediate bulk containers are designed to be handled this way. For metal intermediate bulk containers, at least one of the bottom lift or top lift tests must be performed.

³ The leakproofness and hydrostatic pressure tests are required only for intermediate bulk containers intended to contain liquids or intended to contain solids loaded or discharged under pressure.

⁴ Another intermediate bulk container of the same design type may be used for the drop test set forth in § 178.810 of this subchapter.

⁵ Another different flexible intermediate bulk container of the same design type may be used for each test.

⁶ The vibration test may be performed in another order for intermediate bulk containers manufactured and tested under provisions of an exemption before October 1, 1994 and for non-DOT specification portable tanks tested before October 1, 1994, intended for export.

⁷ This test must be performed only if the intermediate bulk container is designed to be stacked.

§ 178.819 [Amended]

19. In § 178.819, in paragraph (b)(2), the word "rotate" is removed and the words "and bounce" are added in its place.

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Ana Sol Gutiérrez,

Deputy Administrator, Research and Special Programs Administration.

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